CLAIMS

[30990036]

1. A method of encoding data words for transmission, comprising the steps of:

receiving data words from a source;

scrambling the data words using a scrambling procedure which generates at least one predetermined output pattern with a predetermined probability; and

encoding the scrambled data words with a block encoding procedure to produce corresponding code words, different occurrences of the scrambled data word having said predetermined output pattern being selectively encoded with different ones of a plurality of code words associated with that scrambled data word pattern.

2. The method of claim 1, wherein the scrambling procedure generates a plurality of predetermined output patterns with a predetermined probability, and each of said output patterns has associated with it a respective plurality of different code words.

3. The method of claim 1, wherein each of said plurality of code words associated with the scrambled data pattern is unique with respect to code words associated with output patterns generated by the scrambling procedure other than said predetermined output pattern.

4. The method of claim 1, wherein each of said plurality of code words associated with the scrambled data pattern, and the complement of that code word, are unique with respect to code words associated with output patterns generated by the scrambling procedure other than said predetermined output pattern and with respect to complements of those code words.

5. The method of claim 1, wherein one of said plurality of code words associated with the scrambled data word pattern comprises a pattern of symbols which occurs at only one position relative to a boundary between codewords within a stream of codewords.

6. The method of claim 1, wherein occurrence of a predetermined one of said plurality of code words indicates that synchronisation information relating to the scrambling procedure is present in the encoded data.

7. A method of transmitting first and second data, comprising the steps of:

encoding the first data using a block code for which correct decoding of at least some code words considered as a whole is dependent upon polarity of the code word;

encoding the second data using at least one selected input symbol position in the

block code, said symbol position being selected for correct decoding of a symbol at that position to be independent of polarity of the code word;

transmitting said block code words;

decoding said first data in accordance with the values of the block code words considered as a whole; and

decoding said second data in accordance with said at least one selected symbol only.

8. The method of claim 7, wherein one of said first and second data are sent at a time.

9. The method of claim 7, wherein said first and second data are sent simultaneously.

10. The method of claim 9, wherein said first and second data are associated with different respective portions of a code word.

11. The method of claim 10, wherein the second data contain training information associated with a scrambling procedure applied to said first and second data.

12. The method of claim 11, wherein presence or absence of training information is indicated by selection of one of two alternative code words in relation to said first data.

13. The method of claim 11, including the steps of:

completing training of the scrambling procedure in accordance with said training information;

determining whether a polarity-dependent error in decoding of said first data is present; and

controlling inversion of polarity of received code words in accordance with presence of said polarity-dependent error.